

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

REC'D 29 MAR 2005

WIPO

PCT



Applicant's or agent's file reference P-IEE-086-WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA416)	
International application No. PCT/EP 03/50961	International filing date (day/month/year) 08.12.2003	Priority date (day/month/year) 09.12.2002
International Patent Classification (IPC) or both national classification and IPC H01H13/70		
Applicant IEE INTERNATIONAL ELECTRONICS & ENGINEERING S.A.		

1. This International preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 17.06.2004	Date of completion of this report 30.03.2005
Name and mailing address of the International preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Ramírez Fueyo, M Telephone No. +31 70 340-4266 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 03/50961**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-10 as originally filed

Claims, Numbers

2-15 as originally filed

1 received on 04.01.2005 with letter of 30.12.2004

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 03/50961**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-15
	No: Claims	
Inventive step (IS)	Yes: Claims	1-15
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-15
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following document:

D1: US-A-4 362 911 (GROSS JACK R ET AL) 7 December 1982 (1982-12-07)

2. The document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document):

The document D1 discloses (the references in parentheses applying to this document) a foil-type switching element comprising a first carrier foil and a second carrier foil arranged at a certain distance from each other by means of a spacer (28), said spacer comprising at least one recess (30) defining an active area of the switching element, and at least two electrodes (36, 40) arranged in the active area of the switching element between said first and second carrier foils in such a way that, in response to a pressure acting on the active area of the switching element, the first and second carrier foils are pressed together against the reaction force of the elastic carrier foils and an electrical contact is established between the at least two electrodes, at least one of said first and second carrier foils comprising a multi-layered configuration with an inner supporting foil (32, 38) and an outer elastic activation layer (50, 46).

The subject-matter of claim 1 differs from this known foil type switching element in that the outer activation layer is deformed in response to pressure acting thereon in such a way that it presents a greater thickness in a central region of said active area than in a peripheral region of said active area, and thereby presses said inner supporting foil towards the other carrier foil in said central region.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as providing a foil type switching element having an improved response.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP 03/50961

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) because there is no hint in this direction in the prior art.

3. Claims 2-15 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.
4. Industrial applicability.

The subject matter of the application refers to a foil type switching element that is definitely industrially applicable.

Claims

1. Foil-type switching element comprising
a first carrier foil and a second carrier foil arranged at a certain distance
from each other by means of a spacer, said spacer comprising at least one
recess defining an active area of the switching element, and
5 at least two electrodes arranged in the active area of the switching element
between said first and second carrier foils in such a way that, in response to
a pressure acting on the active area of the switching element, the first and
second carrier foils are pressed together against the reaction force of the
elastic carrier foils and an electrical contact is established between the at
10 least two electrodes,
characterized in that
at least one of said first and second carrier foils comprises a multi-layered
configuration with an inner supporting foil and an outer elastic activation
layer, which in response to pressure acting thereon, is deformed in such a
15 way that it presents a greater thickness in a central region of said active
area than in a peripheral region of said active area, and thereby presses
said inner supporting foil towards the other carrier foil in said central region.